U.S. DEPARTMENT OF COMMERCE
National Technical Information Service

PB-275 077

Summary of Early Warning Studies of Specific Chemicals During Fy 75 and Fy 76

Environmental Protection Agency, Washington, D C

Jul 76

PB 275 077

EPA-560/8-76-002

SUMMARY OF EARLY WARNING STUDIES OF SPECIFIC CHEMICALS DURING FY 75 AND FY 76

JULY 1976

ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF TOXIC SUBSTANCES
WASHINGTON, D.C. 20460

REPRODUCED BY
NATIONAL TECHNICAL
INFORMATION SERVICE
U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

TECHNICAL REPORT DATA
(Please read Instructions on the reverse before completing)

1. REPORT NO.	2.	3. RECIPIENT'S ACCESSION NO.
EPA-560/8-76-002		

4. TITLE AND SUBTITLE	5. REPORT DATE
Summary of Early Warning Studies of Specific Chemicals During FY 75 and FY 76	July 1976
	6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S)	8. PERFORMING ORGANIZATION REPORT NO.
9. PERFORMING ORGANIZATION NAME AND ADDRESS U.S. Environmental Protection Agency Office of Toxic Substances 401 "M" Street, S.W. Washington, D.C. 20460	10. PROGRAM ELEMENT NO. 2LA328 11. CONTRACT/GRANT NO.
12. SPONSORING AGENCY NAME AND ADDRESS U.S. Environmental Protection Agency Washington, D.C. 20460	13. TYPE OF REPORT AND PERIOD COVERED Final 14. SPONSORING AGENCY CODE 500/05

15. SUPPLEMENTARY NOTES

16. ABSTRACT

This report summarizes the early warning screening activities for specific chemicals which were initiated during FY 75 and FY 76 by the Early Warning Branch, Office of Toxic Substances, EPA. These substances were identified and selected for preliminary in-house study to determine the need for a more in-depth examination of real or potential hazards associated with them.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Acrylamides Aluminum compounds Arsenic compounds Butadiene Butylated-Hyroxytoluene Butyl phenyl phenol Carbon black Chloroform Chromium Ethoxylated alkylphenols Hexamethyl phosphoramide Lithium compounds sodium sulfonate	Molybdenum Phenylene di-and triamines Polybrominated phenols Triazine compounds Triazole compounds Trifluoroethanol 2-Mercaptobenzothiazole	Vinyl bromide Vinyl fluoride Vinylidene bromide Vinylidene fluoride

18. DISTRIBUTION STATEMENT	19. SECURITY CLASS *(This Report)*	21. NO. OF PAGES
		11
	20. SECURITY CLASS *(This page)*	22. PRICE
		A02-A01

EPA Form 2220-1 (9-73)

EPA-560/8-76-002

SUMMARY OF EARLY WARNING STUDIES OF SPECIFIC CHEMICALS DURING FY 75 AND FY 76

Prepared by

Office of Toxic Substances
Environmental Protection Agency
Washington, D.C. 20460

July 1976

The attached chart summarizes the early warning screening activities for specific chemicals which were initiated during FY 75 and FY 76 by the Early Warning Branch, Office of Toxic Substances. These substances listed alphabetically, were identified and selected for preliminary in-house study essentially to determine the need and priority of the substance for a more in-depth examination, such as a contractor prepared subject investigation report. Given on the chart are the initial reasons for early warning study, the Early Warning Branch activities to date and initial findings, and the further Early Warning Branch activities anticipated for each substance. Further information can be obtained by contacting Dr. Farley Fisher or Frank Letkiewicz of the Early Warning Branch, Office of Toxic Substances, Environmental Protection Agency.

This screening activity represents a major, but not the sole, source of candidates for the hazard assessment activity of the Early Waring Branch. A list of compounds and classes for which reviews have been or are being prepared in conjunction with the hazard assessment activity is presented in the Appendix.

Summary of Early Warning Studies of Specific Chemicals During FY 75 and FY 76

Substance	Reason for Study	Early Warning Activity to Date and Initial Findings	Further Early Warning Activity Anticipated
1) Acrylamides	Information presented at NIEHS Conference on Public Health Implication of Components of Plastic Manufacture 6/29-31/74.	Literature search conducted; Early Warning evaluation recommended an in-depth study. Draft-final of contractor prepared report has been reviewed and final is in preparation. Polyacrylamide, used widely for water treatment, contains residual acrylamide monomers which could enter water systems. Most significant effect of acrylamide is its peripheral neurotoxicity; though it appears to degrade rapidly in the environment, there is concern for local incidents of acrylamide contamination occuring.	Under consideration. (Special Projects Branch is currently initiating further study of acrylamides to focus on environmental sources.)
2) Aluminum compounds	High volume material.	Literature search conducted. Primary health hazard is in aluminum powder industry; high volumes of aluminum salts enter water systems with apparently little known effect. Aquatic effects should be examined more closely, however.	Under consideration.
3) Arsenic compounds	Reported carcinogenicity in occupationally exposed individuals.	Literature search conducted. Data, though equivocal, tend to support carcinogenicity of arsenic compounds.	None. (Arsenic is now under study by the Special Chemicals Branch).
4) Butadiene	Reported correlation between styrene/butadiene operations and leukemia.	Literature search conducted; information summary prepared by contractor (NTIS Report No. PB 253-982).	Under consideration.
5) Butylated hydroxytoluene (BHT)	Information presented at NIEHS Conference on Public Health Implication of Components of Plastic Manufacture 6/29-31/74.	Literature search conducted. Used in plastics as an antioxidant; used widely as food additive with no known adverse effects; environmental exposure unknown, but human exposure from plastics is insignificant compared to food consumption exposure.	No further action recommended.

Summary of Early Warning Studies of Specific Chemicals During FY 76 and FY 76 (cont.)

Substance	Reason for Study	Early Warning Activity to Date and Initial Findings	Further Early Warning Activity Anticipated
6) Butyl phenyl phenol Sodium sulfonate (Areskap)	Japanese refusal to import.	Information gathered indicated the problem was one of paperwork rather than the hazard potential of the material; recommended no further action.	None.
7) Carbon black	Large volume material; may have carcinogenic substances adsorbed to it.	Literature search conducted. Primary hazard appears to be related to carcinogenic polynuclear aromatics. adsorbed onto carbon black during its production. Risk to humans difficult to assess at present.	Unknown.
8) Chloroform	Suspected carcinogen identified in drinking water.	Early Warning Branch represented on EPA chloroform task force.	Chloroform is now under study by other agencies and EPA offices. EWB may review available data, including new carcinogenicity data and undertake a more detailed analysis of environmental exposure.
9) Chromium	Reported carcinogenicity of chromium dye; expressed concern of Japanese government over quantities of chromium-containing wastes left by Occupational Forces in World War II.	Currently updating available information on chromium.	Report to be prepared by contractor.
10) Ethoxylated alkylphenols	Large volume materials with environmental release.	Literature search conducted. Certain types show significant toxic effects and/or low biodegradation; however, use of these is being eliminated by producers. Unique associa- of toxicity with certain chain lengths.	Open file to be maintained on production.

Summary of Early Warning Studies of Specific Chemicals During FY 75 and FY 76 (cont.)

Substance	Reason for Study	Early Warning Activity to Date and Initial Findings	Further Early Warning Activity Anticipated
11) Hexamethylphosphoramide (HMPA)	Reported carcinogenicity.	Information gathered indicated that HMPA was an unlikely significant environmental contaminant. Recent data, however, show some small losses to the environment in certain industrial effluents and from stored waste material.	Additional information being prepared at request of Region III Toxic Substances Coordinator.
12) Lithium compounds	Known effects on nervous system; "suggested" additive to drinking water.	Literature search conducted. Definite effects on nervous system, both beneficial and deleterious. Environmental contamination at levels which could affect humans does not appear to be likely.	Under consideration.
13) 2-Mercaptobenzothiazole	Major chemical in rubber manufacture.	Literature search conducted; Early Warning evaluation recommended an in-depth study. Contractor prepared report available (EPA Report No. 560/2-76-006). Used widely as a rubber vulcanizing agent. Produces allergic dermatitis in man, has central nervous system activity, and inhibits certain enzymes. Environmental levels unknown but widespread low-level contamination possible through leaching from tires and tire dust.	Further action subject to EWB staff review of final report.
14) Molybdenum	Past incident of molybdenum toxicity in livestock.	Attended Symposium on Molybdenum in the Environment, June 1975; judged not a priority substance for EWB. Molybdenum effects in livestock are now well recognized and efforts to control its occurence have been undertaken; widespread molybdenum contamination unlikely, though some concern remains for possible future use of molybdenum catalysts in synthetic fuel production.	Under consideration.

Summary of Early Warning Studies of Specific Chemicals During FY 75 and FY 76 (cont.)

Substance	Reason for Study	Early Warning Activity to Date and Initial Findings	Further Early Warning Activity Anticipated
15) Phenylene di- and triamines	Information presented at NIEHS Conference on Public Health Implications of Components of Plastic Manufacture 6/29-31/74.	Literature search conducted. Used in in plastics and rubber as antioxidant; environmental exposure unknown; related compounds used in hair colorants show allergic and irritative properties; some evidence of mutagenicity in bacterial studies.	Under consideration.
16) Polybrominated biphenyls (PBB's)	Inadvertently fed to livestock in Michigan in mid-1974.	Literature search conducted; information indicated this to be an accident of possible but unlikely recurrence. Summary Characterization of Chemicals of Concern prepared.	None. (Repercussions of the 1974 incident are still a major concern; currently being handled by the Special Chemicals Branch).
17) Triazine compounds	Information presented at NIEHS Conference on Public Health Implications of Components of Plastic Manufacture 6/29-31/74.	Literature search conducted. Variety of uses, mostly as herbicides; some derivatives used in textiles, particularly cotten, as chemical finishing agents; environmental exposure unknown; all triazines probably possess some phytotoxic activity; one derivative appears to be a skin tumor initiator, but it is not carcinogenic in itself.	Under consideration.
18) Triazoles, non-fused	Information presented at NIEHS Conference on Public Health Implications of Components of Plastic Manufacture 6/29-31/74.	Literature search conducted. Certain triazole derivatives are added to plastics as light stabilizers; environmental exposure unknown; related triazoles are used as herbicides, but phytotoxicity of those used in plastics unknown; one simple triazole derivative is teratogenic to chicken embryo and also exhibits thyroid-inhibiting effect in rats.	Under consideration.

Summary of Early Warning Studies of Specific Chemicals During FY 75 and FY 76 (cont.)

Substance	Reason for Study	Early Warning Activity to Date and Initial Findings	Further Early Warning Activity Anticipated
19) Trifluoroethanol	Proposed as working fluid in Rankine Engine.	Literature search conducted. Trifluoroethanol did not meet requirements for Rankine Engine use. Moderately toxic and probably persistent in the environment.	No further action anticipated unless new uses are developed.
20) Vinyl bromide	Used in special fire-resistant polymers.	Literature search conducted; abstracts not yet reviewed.	Unknown.
21) Vinyl fluoride	Used in special fire-resistant polymers.	Literature search conducted; abstracts not yet reviewed.	Unknown.
22) Vinylidene bromide	Possible use in special fire-resistant polymers.	Literature search conducted; abstracts not yet reviewed.	Unknown.
23) Vinylidene fluoride	Use in special fire-resistant polymers.	Literature search conducted; abstracts not yet reviewed.	Unknown.

APPENDIX

Acrylamides	Report in preparation
Antimony	Available from NTIS; accession number PB251438
Aromatic Nitro Compounds	Report in preparation
Aryl Phosphates	Report in preparation
Asbestos	NTIS number not yet available
Asphalts and Tars	Report in preparation
Azo Compounds	NTIS number not yet available
Benzenedicarboxylates	Report in preparation
Benzotriazoles	Report in preparation
Boron	Available from NTIS; accession number PB245984
Brominated Hydrocarbons	NTIS number not yet available
Chlorinated Naphthalenes	Available from NTIS; accession number PB248834
Chlorinated Paraffins	Available from NTIS; accession number PB248634
Chlorophenols	Available from NTIS; accession number PB238074
Chromium	Report in preparation
Ethylene Dibromide	NTIS number not yet available
Ethylenediaminetetraacetic Acid	NTIS number not yet available
Fluorocarbons	Available from NTIS; accession number PB246419
Formaldehyde	Report in preparation
Formaldehyde Resins	NTIS number not yet available
Haloalkyl Phosphates	Report in preparation
Haloethers	Available from NTIS; accession number PB246356
Halogenated Benzenes	Report in preparation
Hexachlorobenzene	Available from NTIS; accession number PB243641

Higher Benzenepolycarboxylates	Available from NTIS; accession number PB248835
Hydrazine	Report in preparation
Indium	Available from NTIS; accession number PB245985
Ion Exchange Resins	Available from NTIS; accession number PB243910
Ketonic Solvents	Available from NTIS; accession number PB252970
Mercaptobenzothiazole	NTIS number not yet available
Methyl Halides	Report in preparation
Nickel	Available from NTIS; accession number PB245986
o-Nitrochlorobenzene	NTIS number not yet available
Optical Brighteners	Available from NTIS; accession number PB243910
Selenium	Available from NTIS; accession number PB245987
Silicones	Available from NTIS; accession number PB247778
Tetrachloroethylene	Available from NTIS; accession number PB243910
Tin	Available from NTIS; accession number PB245988
Titanium Dioxide	Available from NTIS; accession number PB242293
1,1,1-Trichloroethane	Report in preparation
Vanadium	Available from NTIS; accession number PB245989